Severe, Drug-Resistant OCD Successfully Treated With rTMS and Concomitant Multidisciplinary Psychotherapy: It's Not Only About the Coil

To the Editor: Whether adjunctive treatment with repetitive transcranial magnetic stimulation (rTMS) is beneficial in medication-resistant obsessive-compulsive disorder (OCD) is a matter of ongoing debate. In guidelines[1] published in 2014 on the therapeutic use of rTMS, no recommendation was possible regarding its efficacy in OCD at any of the target brain regions (supplementary motor area, orbitofrontal cortex, and dorsolateral prefrontal cortex) and treatment protocols (high or low frequency) examined, mainly due to the conflicting results and the small sizes of the studies published at the time. Some newer studies[2–5] have shown positive effects, but these results are still limited mainly by small sample sizes. Here, we present the case of a patient with severe, medication-resistant OCD who improved significantly following rTMS treatment, adding to the body of evidence favoring the use of rTMS in OCD. We also describe an integrated approach wherein we combined daily rTMS with psychotherapy, thus addressing the multifaceted behavioral, cognitive, and family difficulties of our patient and augmenting the therapeutic efficacy of rTMS.

Case report. A 19-year-old white man was referred to us for treatment of OCD with rTMS. Early, albeit mild, signs of OCD were present during adolescence. His present history started in April 2014 when, following emotional stress, he developed increasingly complex obsessions and lengthy compulsions. He spent hours touching a wall until someone said the "right words" to him, and he festinated for hours on floor lines, which made walking impossible. His obsessions and compulsions were constantly changing on a biweekly basis and often required the participation of his father or mother to help resolve them. He had been hospitalized multiple times in the past, and at the time of presentation, he was taking clomipramine 400 mg/d (CYP2C19*1/*17 phenotype, fast metabolizer), clonazepam 12 mg/d, and olanzapine 10 mg/d. The patient was home-bound and spent his entire day consumed with obsessions and compulsions. At presentation, his Yale-Brown Obsessive-Compulsive Scale (Y-BOCS)[6] score was 38, indicating extreme OCD and a diagnosis according to *DSM-IV* criteria.

Informed consent for rTMS treatment was obtained from the patient and parents. Treatment comprised 20 daily rTMS sessions. Six hundred 1-Hz pulses at an intensity of 100% resting motor threshold were delivered through a figure-of-8 coil (C-B60, MagVenture, Denmark) at the supplementary motor area. Importantly, during the rTMS sessions, we had the chance to observe the patient's daily behavior, family dynamics, and specific difficulties. This observation allowed us to offer targeted psychotherapeutic interventions of diverse types: cognitive-behavioral (learning to accept obsessions and compulsions as a pathological condition and to replace lengthy and complex with shorter and simpler obsessions and compulsions) and family counseling (observing son-father-mother relations during stressful compulsions and establishing behaviors that avoid/resolve conflicts). Drug treatment remained unaltered during the rTMS and psychotherapy sessions.

After treatment, obsessions and compulsions were significantly ameliorated. The Y-BOCS score decreased to 17 (moderate OCD). Indicatively, the time that our patient needed to cross floor lines and to enter the treatment room decreased from an average of 41 minutes to 2 minutes, and he was able to walk unaided (video available at: https://www.youtube.com/watch?v=vRJxrGaUoMg). Three months posttreatment, he had restarted daily activities (gym, walks, school). He continued taking the same medications listed previously, and he started behavioral psychotherapy. Additional rTMS sessions were not required in the follow-up period.

We postulate that rTMS synergized with psychotherapy to achieve this positive result in our patient. The patient had undergone psychotherapy in the past but could not overcome his obsessions, thus we do not believe that the observed improvement resulted from psychotherapy alone. rTMS reduced anxiety in our patient (from 9 to 3 in a 10 mm visual analog scale). Published studies[7] have shown that rTMS down-regulates the supplementary motor area hyperactivity that occurs in OCD. We hypothesize that the neuronal plasticity induced by rTMS augments psychotherapy. In addition, coming to the office every day for rTMS treatment offers a window for intensive observation and counseling. We use this holistic approach routinely to treat OCD and depression. We believe that this approach improves the results of each separate treatment.

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Spyros N. Deftereos, MD, PhD[a]
deftereo@gmail.com
Dimitra D. Georgonikou, MD[a]

[a]Private Practice, Agiou Ioannou 28 st, Agia Paraskevi, 15342, Athens, Greece

Potential conflicts of interest: None.

Funding/support: None.

Published online: April 20, 2017.

Patient consent: Permission was received from the patient to publish this case.

Prim Care Companion CNS Disord 2017;19(2):16l02020
https://doi.org/10.4088/PCC.16l02020